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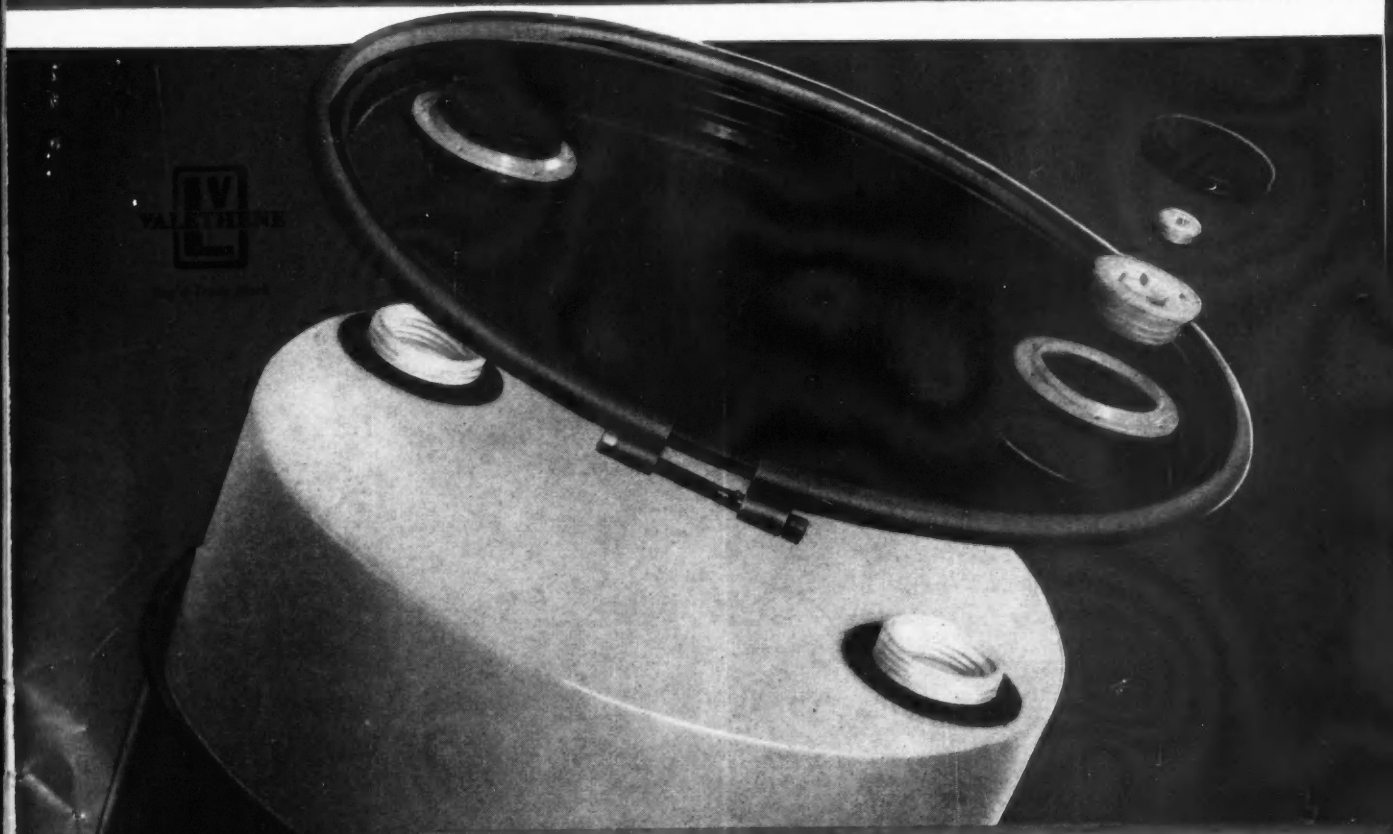

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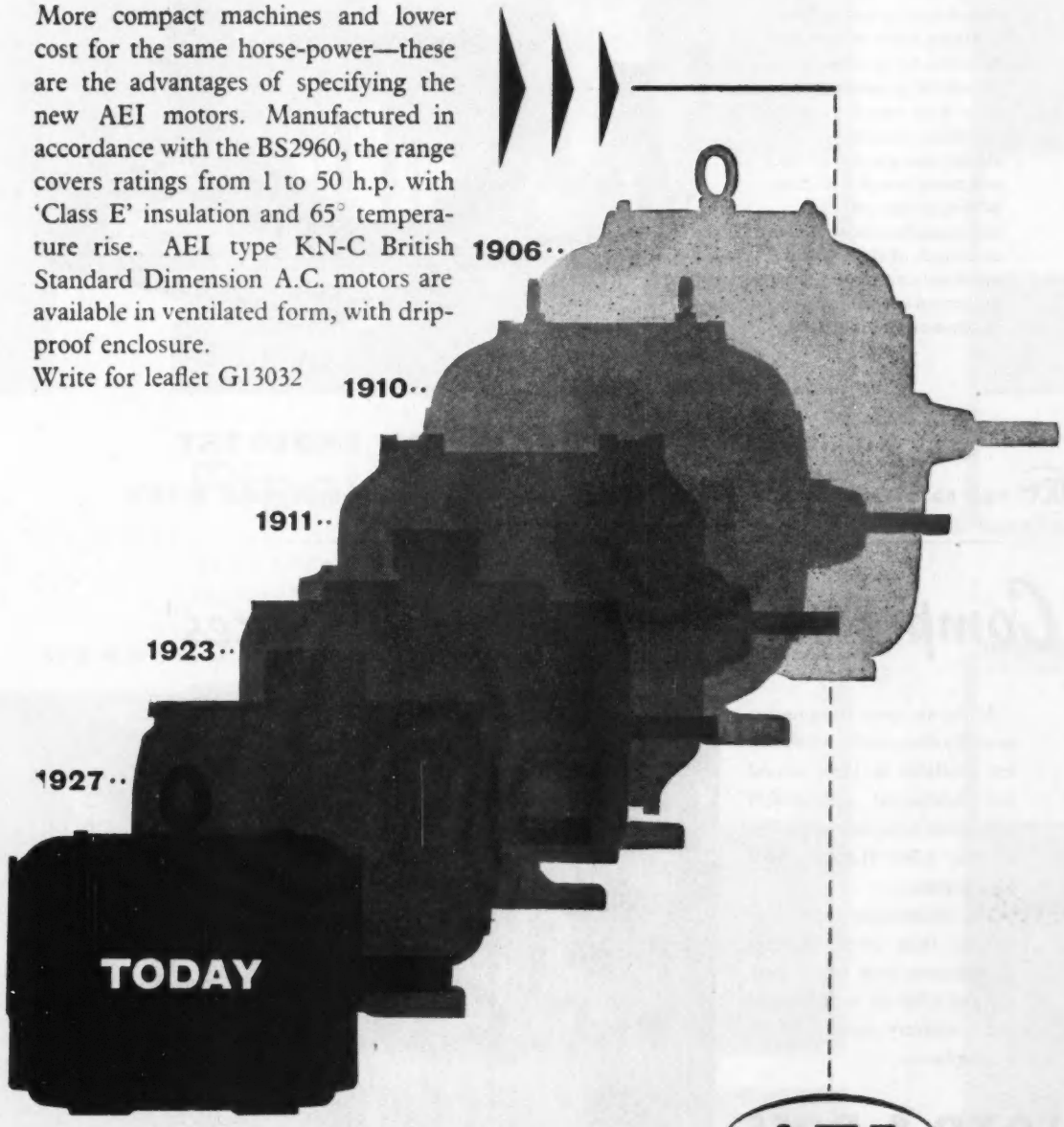

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No. 2088 P.43

The printing dispute, in which Chemical Age is not directly involved, continues to preclude normal publication. This emergency edition summarises the news of the week.

AMOCO POLYSTYRENE UNIT. Facilities for the production of high-impact and conventional polystyrene will be built by Amoco Chemicals Corp. at Joliet, Ill, U.S. Ground will be broken next month and construction of both commercial and product development plants will be started simultaneously. Commercial plant is scheduled for completion by 3rd. quarter, 1961, and the development unit, which will produce polymers for customer evaluation, by 2nd quarter 1960. The process used has been developed by Standard Oil at Whiting, Ind., in their research laboratories.

DRACONES IN REGULAR SERVICE. First Dracone flexible oil barge (C.A., 13 June, p.974) to enter regular service has begun deliveries between Esso Refinery, Fawley, and Esso distribution units at Newport, I.o.W., and Portsmouth. The Dracone is constructed of Hycar nitrile rubber (see p.48) and nylon. Esso say that movements of petroleum by this method will now be a regular feature of shipping on Southampton water.

REFINERY FIRE. Lightning struck distillation plant at Esso's Fawley refinery last week-end and gas under pressure took fire and burned for 35 minutes. One furnace was damaged and was expected to be out of action for a week. A second fire and a power failure also occurred but caused no serious damage and no loss of production.

COMPUTER CONFERENCE. At the British Computer Society conference at Cambridge, G.S. Galer (Shell Chemical) described linear programming now used widely by Royal Dutch/Shell Group, for solving complex economic problems. For example, a group of petrochemical plants will produce 50 final products from one base material. The plants may be operated in many ways and production of many products is closely related to that of others. Potential market for each product is known. How should the production and marketing plan be drawn up? How should any shortage of material be allocated? Under linear programming, a large number of equations which express all the possibilities of sales and production is set up with an expression describing the profit to be gained from each combination of possibilities. A long calculation enables a choice of method of running the plant and of selling the products which will yield the largest profit.

One of the group's plant complexes is now regularly operated on these principles, the work being done on a large Ferranti Mark I computer in Amsterdam. The group now plans a wide extension of this work, using the larger and faster Ferranti Mercury which is being installed in London. Planning will be carried out several years ahead.

PRICE CUT. Sulphate of copper price is reduced by £3. 10s a ton.

O.E.E.C. CHEMICALS REPORTS. Total carbon content of petrochemicals produced in member countries of the Organisation for European Economic co-operation rose from 630,000 tons in 1957 to 813,000 tons in 1958 and is expected to increase by a further 50% to 1,225,000 tons in 1959. This is stated by the O.E.E.C. Petroleum Chemicals Working Party after a recent meeting chaired by Prof. G. Roberti, Italy.

Since 1943, when West Europe's first petrochemical plant came on stream, £775 m. has been invested in terms of plants in operation. Belgium and Denmark began producing petrochemicals in 1958. Investment has risen by more than 40% since the end of 1957 and will rise even more rapidly to over £1,600 m. by end-1961, when Austria will have set up plants.

Vastly increased quantities of raw materials will be needed and some 5 m. tons of liquid and gaseous feedstock may be needed this year. Products where output will be appreciably expanded include synthetic rubbers, plastics materials (mainly polythene and polypropylene), ethylene oxide derivatives and solvents.

Plastics Materials. This O.E.E.C. working party says that 1958 total sales reached 1.6 m. tons or 15% up on 1957. Most rapid expansion has been in thermoplastics, where sales rose by 20% to reach 780,000. Sales of thermosetting plastics rose by 11% over 1957 to reach about 630,000 tons. For both groups the rate of expansion was slightly lower than last year; it seems that output will continue to expand.

Dyestuffs. After a marked increase in dyestuffs production in 1957, output fell to 106,000 tons in 1958, a drop of 15%. Trade in dyestuffs also declined, but to a lesser extent. Improvement in the general economic situation and renewed interest in textiles in most countries, should lead to better demand for 1959-60.

POLLUTION COMPLAINT. Pollution of the River Irwell at Bury, Lancs, has been traced to a semi-solid waste material, consisting mainly of synthetic detergent, tipped in the Rawtenstall area. Mersey River Board says that a sample contained over 1,000 p.p.m. of detergent. The taking of legal proceedings has been authorised.

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TWO eminent scientists honoured recently were Dr. R. Belcher. appointed to the first chair in analytical chemistry at Birmingham University and Dr. Hans Herman Kuehne who has been made an hon. D.Sc. of Durham University. When he joined Prof. (now Sir Harry) Melville at Birmingham in 1949, Dr. Belcher took the nucleus of the analytical research school that he had built up at Aberdeen. Now it has grown to be one of the largest and best of its kind in the world. The professorial chair is a fitting reward to Dr. Belcher's many years of service to analytical chemistry during which time he has published more than 200 papers.

Dr. Kuehne now living in retirement in Germany, acted as consultant in the construction of the anhydrite/sulphuric acid plant for Marchon Products at Whitehaven. His process provides sulphuric acid at an economic price, using anhydrite from the Marchon mine. He joined Farbenfabriken Bayer in 1916 and had become managing director in 1933 and was in charge of the Bayer division of I.G. from then until 1943. His process for manufacturing Portland cement and sulphuric from anhydrite is used in the U.K. at Billingham, Widnes and Whitehaven.

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Further to the Knapsack-Griesheim process for acrylonitrile (see C.A. last week), the monomer is shipped to Farbenfabriken Bayer where it is used to make Dralon fibre. By-product vinyl acetylene is concerted in a further new plant to chloroprene, which goes to Bayer for manufacture of polychloroprene elastomer.

NEW HÜLS DEVELOPMENTS New polythenes are to be introduced soon by Chemische Werke Hüls with the start-up of the new Ziegler-Natta low-pressure plant at Marl, West Germany. Large-scale production of polypropylene is also planned (C.A.,23 May, p.859).

Shortly, too, a range of new materials is to be introduced in the field of cyclododecatrene for which Hüls took up a production licence last year. More polymers and copolymers from olefins and diolefins are to be added by Hüls to their range of elastomers soon, through co-operation contracts in olefins and polybutadiene with U.S. producers.

Hüls are now the largest styrene produc ers in Europe with an annual capacity of 80,000 tonnes. Work on l.p. polythene has been carried out jointly with Hibernia A.G. The new acetic acid plant has doubled previous capacity, while sales have risen eightfold since 1952. New plant is being erected for the production of phthalic anhydride with a capacity of between 500-600 tonnes. Ethylene oxide plant, using the direct oxidation process, has been extended, raising capacity by 100% and will soon be operating. A propylene oxide unit has been erected.

Research is being conducted on behalf of Bunawerke Hüls into the development and improvement of synthetic rubbers, particularly in rubber-oil, rubber carbon black and rubber-oil-carbon black compounds. New processes have been developed in the petrochemical field for the production of intermediates, for which no acetylene is required. Future plans include a hydrogen pipeline from Marl to Bayer at Leverkusen.

A NEW BORAZOLE. In view of the increasing interest in borazoles as potential building units for inorganic-type polymeric materials development quantities of B-trichloroborazole are now available from Borax Consolidated Ltd. It is a new reactive type boron-nitrogen chemical intermediate soluble without reaction in C_6H_6, C_6H_{12}, CS_2, CCl_4, C_6H_5Cl, $CHCl_3$, $(C_2H_5)_2O$. It reacts with CH_3OH and C_2H_5OH and hydrolyses on contact with water or moist air.

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V S.C.I. Annual Meeting V
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IN his annual address, Sir Robert Robinson, retiring president, Society of Chemical Industry, said that improvements in computer techniques were likely to make examinations of structures a routine matter and to streamline research. Before the U.K. spent too much on space satellites they ought to spend more on laboratory equipment, particularly for some aspects of molecule research. If industry were to succeed there must be more organic chemists.

In his report Dr. E.B. Hughes, hon. treasurer, referred to the rising costs of S.C.I. publications: the council proposed that their price should be raised.

The 1963 a.g.m. will be held in N. York. In addition to names given last week Dr. Jas. Craik, chairman I.C.I. Nobel Div., was elected a vice-president.

For report and pictures of the annual meeting see C.A. last week pp. 28 and 31 and this week p.56.

SOIL STERILISERS. Answering Sir A. Bossom in the Commons, Mr. J. Hare, Minister of Agriculture, said conditions under which damage was caused to plants set out in soil treated by fumigants based on sodium methyldithiocarbamate were being investigated and it was hoped revised instructions would reduce the difficulties.

PHOTOMETER. A new photometer in the Sigrist range distributed by Southern Instruments Ltd. enables absorption measurements from liquid phthalic anhydride to be taken on a flow basis. Flow cell pressures up to 6 atmos. can be withstood. Measuring range is 0-100 mg. Pt/litre for standard platinum yellow solution at an accuracy better than 2 mg. Pt/litre. (Southern Instruments Ltd., Camberley).

ceedings has been authorised.

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for manufacture of polychloroprene elastomer.

BOAKE ROBERTS - U.S.TIE-UP. An agreement has been reached by A. Boake Roberts with Archer - Daniels - Midland, Minneapolis, for exchange of information in the field of epoxidised chemicals used as plasticisers. It covers research, development, manufacture and use.

MORE RUBBER USED. World consumption of natural rubber rose 10% in the first four months of 1958, but consumption of synthetic rubber rose by 25%, states the International Rubber Study Group. It is estimated that the world used 695,000 tons of natural rubber in the first quarter, against 632,000 tons in 1957. Consumption of synthetic rose from 392,000 to 490,000 tons. The increase in natural rubber usage has largely been outside the Soviet Bloc, as Russian and Chinese imports this year, at 105,750 tons, show little change. Natural rubber production in April was 152,000 tons, with consumption estimated at 170,000 tons and synthetic consumption at 115,000 tons.

COAL GASIFICATION. Mr. R.Maudling, Paymaster-General, said in Parliament recently that the Ministry of Power was pressing forward with experimental and developmental work, and work on design studies in connection with the use of coal as a material for chemicals. In addition the question was being examined by the Wilson Committee. Mr. Maudling was asked if he had considered the Charles Turner project whereby coal was boiled for the extraction of chemical by-products and from which process it was claimed would flow power as cheap as water. Further asked if the work could be expedited in view of the fact that 'we are still importing vast supplies of chemicals which can be produced from British surplus coal', Mr.Maudling said it was with this thought in mind that the Wilson committee had been set up. He added he would do what he could to speed up publication of the Wilson report. He told a further questioner that the committee could make recommendations on the desirability of the National Coal Board itself undertaking large-scale development work on gasification. In addition to its contribution of £140,000 to the work of B.C.U.R.A., the N.C.B. last year spent between £300,000 and £400,000 on the development of briquetting techniques and by-products from coal.

U.K. BERYLLIUM LINK. Imperial Smelting Corp., U.K. subsidiary of Consolidated Zinc Corp., and Beryllium Corp., Reading, Pa., U.S., have formed - subject to Exchange Control consent, a new, equally owned U.K. company, Consolidated Beryllium Ltd., which Imperial Smelting will manage. The new company will produce nuclear grade beryllium metal at a plant due to start production later this year. Erection is to start at once of a beryllium-copper master alloy plant, also at Avonmouth, to supply the U.K., to which the Beryllium Corp. has been exporting.

In view of possible future needs of the U.K. nuclear power programme, the new company plans the largest beryllium metal plant in the world, to enable construction to begin without delay as soon as large-scale demand develops. Meanwhile, the U.S. partner will provide any metal needed in excess of Consolidated Beryllium current capacity.

SWINBURNE MEDAL. The Plastics Institute has instituted the Swinburne Medal to commemorate the late Sir James Swinburne, 1858-1958. Details can be obtained from the Institute at 6 Mandeville Place, London, W.1.

and C_2H_5OH and hydrolyses on contact with water or moist air.

than 2 mg.Pt/litre. (Southern Instruments Ltd., Camberley).

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PROJECT Dragon, in which the U.K. and 11 Continental countries are co-operating, is taking shape at the Winfrith Heath, Dorset, atomic energy research establishment.

Zenith, a low-power reactor built for preliminary research on the high-temperature Dragon reactor, is almost completed. About 50 scientists and engineers from the Continent will arrive at Winfrith in the early autumn to work with the British team.

Dragon will be a development of the Calder Hall type of reactor and will run at much higher temperatures. Fuel elements for this reactor consist of graphite cylinders containing pellets of uranium or thorium oxide. A special almost impermeable type of graphite has been produced for the purpose by the General Electric Co.

Helium as Coolant

Helium is used instead of carbon dioxide to remove the heat from the core of the reactor as it flows under pressure past the fuel elements. In the heat exchanger the heat is removed from the hot gas (800°C) and rejected to the atmosphere while the cool gas (350 deg.C) is pumped by circulating fans around the inside of the pressure vessel back to the reactor core to complete the circuit. As the graphite cans cannot be made absolutely impermeable, provision is made for an inward leak of helium which is then passed through a fission product trap and returned to the circuit. The activity of the main coolant circuit is thus kept as small as possible. The main technological problems of this type of reactor are the development of suitable materials for use at high temperatures, both in the fuel elements and in the other parts of the reactor.

Developments have to be tested under irradiation conditions, and getting necessary facilities is a major problem. Use will be made of facilities in Europe.

Work on the Dragon project is to last five years and may cost £13.6m. £10m. will be shared between the countries taking part and anything over that amount up to £3.6m. will be borne by the U.K., who at the end of the five years will own any equipment built.

Provision is being made for the building of as many as six reactors at Winfrith Heath.

Mr. D.W.Fry, director of the establishment, said last week that when the station had developed to its full size the total capital investment might be £20m to £25m.

Effluent of low radioactivity will be disposed of by pipelines running five miles to the coast and a further two miles out to sea. Radioactive liquid will flow through an inner pipe and non-radioactive wastes through an outer pipe. Monitors will detect any leaks from the inner pipe.

Waste of high radioactivity will be treated by flocculation, the residue being enclosed in impermeable containers before it is disposed of.

GLASGOW EXHIBITION. An exhibition of laboratory supplies was held at the Royal College of Science & Technology, Glasgow, by the Glasgow Section, Royal Institute of Chemistry, from 7 to 10 July.

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POLYMERIC PROGRESS. A conference on Polymeric Progress, to be held at London University on 30 and 31 March 1960 will include papers by Prof. H.F.Mark (New polymers, new problems); Dr. N.J.L. Megson (High-temp. resistant materials); W.H. Linton (Polyacetals); Dr. H. Schnell (Polycarbonates); J.R. Whinfield (title to be announced); Prof. G. Gee (Newer methods of polymerisation); Prof. G. Natta (Recent advances in stereospecific polymers); Dr. H.M. Stanley (Impact on plastics industry of developments in petrochemicals).

BRITISH GEON'S HYCAR PLANT

PRODUCTION of Hycar nitrile rubbers started in Great Britain by British Geon, Ltd., at their Barry, Glamorgan plant in August, 1947. Until last week the plant had not been thrown open to the technical press.

Built at an estimated cost of about £200,000 the plant has a capacity of 4,000 tons a year, (Present production is around the 2,000 ton mark for solid rubber). As demand for these hot and cold rubbers as well as latices grows, there is room on site for doubling capacity to 8,000 tons. (Up to 1957, 3,000 tons a year of nitrile rubber were imported from the U.S.)

High quality butadiene, obtained from British Hydrocarbon Chemicals, Grangemouth and acrylonitrile, imported from Northern France, are the raw materials used in Hycar production. These are copolymerised in a dispersed medium of softened water, using fatty acid soaps as the emulsifying agent. The butadiene, as received, contains an inhibitor which is removed by washing with dilute caustic soda before polymerisation.

Automatic metering is employed for addition of soap solution. There are three polymerisation reactors each of 720 galls. capacity. These are enamel-lined and are cooled by means of eight vertical coils. These vessels require to be cleaned about once in six batches, in contrast to the pilot reactor in stainless steel which requires more frequent cleaning. Polymerisation time varies from 9 to 18 hours. An 86% to 97-98% conversion is obtained. For hot rubbers a temperature of 5°C is employed, cooling being effected by refrigerated $CaCl_2$ solution at - 10°C. A pressure of 25-30 p.s.i. is used initially tailing down to 5 to 1 p.s.i.

Throughout the reaction, polymerisation is carefully controlled and at a pre-determined point latex is transferred to a blow-down tank where short-stops, antioxidants and heat-stabilisers are added.

The bulk of residual monomer is removed at this stage. Conversion is checked at present, by laboratory analysis every 3-4 hours by regular solids content determinations. pH values and Mooney viscosity (using a U.S. A.S.T. recommended model S.T.I. Mooney viscometer) are measured on latices. British Geon hope to be able to use an automatic method of estimating conversion. Since the polymerisation reaction is an exothermic one, the intention is to measure the temperature difference between water entering and leaving the reactor coils. To measure the heat ouput B.t.u. Elcontrol meters are being employed. Should this method of measuring conversion prove effective, it will reduce lab. sampling to one in six.

After blending latex which is intended to be sold as such is treated to remove all traces of monomer and at the same time to concentrate it. Otherwise the latex is heated to produce crumb rubber which in turn is converted into sheet.

Conversion of latex into crumb is carried out by semi-continuous process. First the latex is lightly flocculated with brine, NaCl or KCl acid solution treated with a small amount of acid (H_2SO_4, HCl or acetic acid). The crumbs are then washed several times with alkalis to remove the emulsifying agent. The crumb slurry is then pumped to a storage tank and from there a constant feed passes to a wire mesh screen where the serum liquid is removed. The crumbs are then sheeted in special equipment, still under wraps (this equipment is understood to be the only type in existence; development was initiated by Distillers' partner in British Geon, the U.S. company, B.F. Goodrich Chemical Co). The sheet is cut into 15 in. x 10in. x ½ in. sections dusted with talc and packed in 50 lb. bags with polythene linings. Automatic weighing is employed.

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Dr. J.V. Dunworth, assistant to director for reactor developments at Harwell, has been appointed deputy director of the Winfrith Heath Reactor Development Research Centre. He was born in 1917 and was educated at Manchester Grammar School and Clare College, Cambridge, and worked on radar during the war. He went to Harwell in 1947. Dr. Dunworth was awarded the C.B.E. in 1955. He is editor-in-chief of the Journal of Nuclear Energy.

Dr. James T. Kendall has been appointed general manager, marketing, of Texas Instruments, semiconductor manufacturers, Bedford. He is succeeded as general manager, technical, by Dr. J. Powell.

Plastics Institute Gold Medal has been awarded to Mr. N.J.L. Megson (Royal Aircraft Establishment) for a paper on 'Modern ideas on polymer formation.' Silver Medal has gone to Mr. J.M. Buist and Mr. A. Lowe (I.C.I.) for a paper on 'Polyurethanes, properties and applications.'

Dr. R. Hurst, director Dounreay Experimental Reactor Establishment, headed a group of four scientists from the Atomic Energy Authority who earlier this month visited the 5 mW fast reactor in Moscow. A return visit by Soviet scientists to Dounreay is likely.

Dr. F.W.G. White, C.B.E., has been appointed chairman of the Commonwealth Scientific and Industrial Research Organisation, Melbourne. He is a member of the Scientific Advisory Committee of the Australian Atomic Energy Commission.

Lord Rochdale has joined the board of Geigy (Holdings) Ltd. He is chairman of Kelsall and Kemp Ltd., wool textile manufacturers, and chairman of the Cotton Board.

Dr. A.C. Monkhouse has been elected president of the Institute of Fuel, in succession to Mr. T.C. Bailey.

Mr. H.T. Kemsley, secretary of British Industrial Plastics Ltd., has been appointed a director.

Mr. G.C. Ives, B.Sc., A.R.I.C., who has been elected a fellow of the Plastics Institute, is a director of the Yarsley Testing Laboratories Ltd., Chessington.

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Borax Price Increases. Price increases announced by Borax and Chemicals Ltd. for Three Elephant brand products, from 17 August, are: Granular borax by £1 a ton, powder and crystal grades £2, refined pentahydrate borax £1, dehydrated borax £2, granular boric acid £1 10s, powder and crystal grades £2 10s.

Microfilm Reports. Preparation and publication of micro editions of scientific and technical journals, theses and reports has been undertaken by Micro Methods Ltd., who are distributing a wide selection of U.K. Atomic Energy Authority's unclassified and declassified reports: Group A up to Dec 1956, £120 complete set; Group B, Jan 1957 to June 1958, £14 and Group C, July 1958 to June 1959, £12; separate copies 2s a card. Enquiries to Micro Methods Ltd., E. Ardsley, Wakefield, Yorks.

Glasgow Office. R.W. Greeff & Co. have opened a branch office at 147 Bath St., Glasgow C.2. (Tel. Central 2564) under the management of Mr. A. Mawer, who, trading as Robert A. Bird & Co., has been Greeff's Scottish agent many years.

Microcellular Rubber. Microcellular rubber for shoe soles in white and a range of pastel hues is described in a formulations leaflet issued by Whiffen and Sons Ltd., 95 Wigmore Street, London, W.1.

COMMERCIAL NEWS

Courtaulds. More than 90% of the 6% cumulative preference shares and over 90% of the ordinary shares of Harbens Ltd. have been acquired by Courtaulds Ltd.

Coalite and Chemical. Capital expenditure of Coalite and Chemical Products Ltd. outstanding at 31 March 1959 was £181,000. This included a new building and additional plant for the manufacture of solid chemicals. Since the end of the financial year additional commitments have been entered into which already total approximately £230,000. These include creation of another battery of retorts at Bolsover and a new research centre. Wage increases and lower profit margins for certain oil and chemical products have been largely cushioned by benefits from an efficiency campaign. Increased demand for catechol and its derivatives, particularly tertiary butyl catechol, has continued. Additional plant for the manufacture of chlorinated products has been commissioned and has resulted in a considerable increase in productive capacity. Pilot plant operations for new products are increasing. Profit was £760,739 (774,400) and net profit of the group was £380,335 (£365,814).

Morgan Crucible. A fall in group sales of Morgan Crucible Co. has resulted in a decline in gross earnings of £180,000, although there is a net difference of no more than £75,000 because taxation is lower. Overseas sales have fallen from nearly 45% to just over 40% of total turnover because of a strike in the U.S. factory. The chairman, Mr. P. Lindsay, hopes, however, that lost ground will be recovered in 1959-60. To counter export competition the company's organisation is being expanded. Product of the factory in Poole belonging to associated company Nuclear Graphite Ltd. is now coming off the production line.

Mathias Stinnes. Mathias Stinnes, Essen, one of Europe's leading producers of hydrocarbon chemicals, have declared a dividend for 1958 of 10% (same) on founders' shares and 11% (same) on preference shares. Out of total turnover of DM 494m. or £41.2 m. (1957 DM 485m. or £40.42m.) chemical sales accounted for DM 66m or £5.5m (1957 DM51m. or £4.25. Ammonia production in 1958 was 48,000 tonnes (43,000 tonnes). Work on the second stage of the ammonia synthesis plant at Stinnes' subsidiary, Ruhrol, was finished late last year. It has a capacity of 100,000 tonnes/year of nitrogen in the form of primary ammonia.

Lansil. Producers of cellulose acetate and artificial silk, Lansil, see no reason why dividends for the year ended 31 March should not be maintained for the current year. Dividend was 8.9662% on ordinary and 33-1/3% on deferred. Group net profit was £147,984 (£36,400). Lansil are seeking new outlets, preferably allied to the group's basic interests, for extending their operations.

CIBA. Net profit of CIBA Ltd., Basle for 1958 was Sw.frs.24.3m. (£2,025,984), a rise of Sw.frs. 808,067 (£67,338). £641,666 has been allocated to welfare and research funds and Sw.frs. 14.4 m. (£1.2 m.) has been distributed as dividends. Overall sales by CIBA companies in 1958 were Frs.913.9 m., a rise of Frs.22.8 m. Trading of Clayton Aniline during the first months of 1958 was profitable, but thereafter demand for most of the products dropped off until the end of the year. Profit margins had hardened. Owing to marketing efforts, CIBA Clayton were able to increase their share of the reduced total business available in 1958. Last year, CIBA Laboratories Ltd. again devoted more than 12% of turnover to the promotion of research. Sales of CIBA (A.R.L.) were a record.

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Liquid Polyester Resin. Atlac L-382-13, produced by Atlas Powder, Wilmington, Del, is a liquid polyester resin for making chemical-resistant tanks, textile and pulp and paper equipment and for other uses where corrosion may be a factor. Claims made for Atlac L-382-13 are: marked resistance to water, acids and alkalis, particularly at high temperatures; heat distortion temp. 285°F, excellent electrical properties and lack of styrene after-odour.

Cyanamid's Superflocculant. A new flocculant, Superfloc 16, is being offered by American Cyanamid. It is a high molecular weight polyacrylamide in granular form. The cost is $1.50/lb. in truck lots. The main outlet, it is believed, will be uranium mining. Good overflow clarity with high underflow density is claimed. Trials have indicated a decrease in soluble U losses by increasing underflow densities 5 to 7%. Other applications: clarifying coal plant effluent, treatment of water and sewage suspensions, industrial wastes and chemical precipitates.

U.S. Melamine Plant. American Cyanamid have reported that they will build at Wallingford, Conn., a plant to produce melamine, the company's second of its kind.

Australian Phthalic Anhydride. A plant to be built for Newcastle Chemical Co. (Pty) Ltd. will meet all Australia's requirements of phthalic acid. The plant, which will more than double the company's present production and save about £A500,000 annually in overseas funds, will cost about £A1m. Newcastle Chemical Co. is a joint enterprise by I.C.I. of Australia and New Zealand and Broken Hill Pty.

Fertilisers from Coal. A United Nations expert has reported confidentially, but it is believed favourably, to the Malayan Govt. on the possibility of manufacturing fertilisers from indigenous coal.

U.S. Exhibition. More than 450 manufacturers have taken space at the 27th Exposition of Chemical Industries, to be held at the New York Coliseum, 30 November to 4 December. Details are obtainable from International Exposition Co., 480 Lexington Ave., New York 17.

French Merger. French synthetic textile companies Rhodiaceta and Comptoir des Textiles Artificiels have merged to reinforce their position in the Common Market.

Fatty Acids in Canada. Chemical Developments of Canada are to produce fatty acid derivatives under agreement with Armour Chemical Division, Chicago, at their plants at Longford Mills, Ont.

Cellophane for Australia? Courtaulds Group may manufacture Cellophane in Australia. British Cellophane, a Courtaulds subsidiary, have been considering the move in conjunction with Australian Cellophane (Pty) and Courtaulds (Australia) Ltd. British Cellophane have a 75% interest in the Australian company, the remaining 25% being held by Courtaulds (Aust.).

CIBA Developments. CIBA of Basle are developing processes for the extraction of niobium and tantalum of high purity. Also under development is a colour photographic process. Applied physics are being combined with special photochemical methods to 'provide a novel approach'. In his annual report, Dr. R.Kappelli, chairman, said the speed with which industrial chemistry was expanding offered opportunities for organic extension of CIBA's activities to new fields.

Lamp Black Factory in Italy. The U.S. Columbian Carbon Co. is going to build a lamp-black plant with a capacity of 60m.lb/year. near Milan to supply the European Common Market. It will cost about £2m.

Egypt Buying Fertilisers. The Banque du Credit Agricole et Cooperative, of Egypt, announces that it is to spend £E 3m. on fertilisers from European countries.

Israel Oil Pipeline. The Israeli Minister of Finance has approved in principle the investment of £7 m. on a pipeline to carry 5m. to 6m. tons of oil a year between Eilath and Haifa.

Bayer Pesticides. Bayer AG have produced two drugs for use against pests infesting cattle and other domestic animals. Neguvon is for use against fly larvae living under the skin of cattle and stomach and intestinal parasites. Asuntol kills ticks and other skin parasites. It forms a fine film on the hair of animals which is said to prevent reinfestation.

Lithium Mine Run-down. Rhodesia's biggest lithium producer, the Bikita mine, is to be placed on a care and maintenance basis early next year. Lithium, used in the production of rocket fuels, is now being produced much more cheaply in the U.S.

E. German Congress. Papers are invited for a congress to be held by the E. German Chemical Society in Dresden on 3-5 December 1959 on problems relating to anodic passivity, inhibitor action and allied electrochemical questions.

Indian Synthetic Rubber. India hopes shortly to build a factory with a capacity of 30,000 tons a year of synthetic rubber based on alcohol at Bareilly (United Provinces), the Ministry of Commerce stated. A team from the US has been making a study of the economics of its manufacture.

To Make Polycarbonates. Mobay Chemical Inc., U.S., producers of polyurethane, are to enter the polycarbonate plastics field using Farbenfabriken Bayer's process and technology. New plant, scheduled to be operating early next year, will be at New Martinsville, W. Virginia. Mobay consider that outlets exist in automotive, electronics, computer and equipment industries.

Surplus Sodium Borohydride. Stock of sodium borohydride -- basic material in high-energy fuels -- held in the U.S. is surplus to the Government's needs, the U.S. Navy reports. A $13.5m. contract with Metal Hydrides Inc. has been cancelled, owing, it is reported, to a planned shift from fuel HEF-2 to new type HEF-3, also boron-based. Two other companies involved are Olin Mathieson and Stauffer Chemical. Metal Hydrides $4m. plant at Danvers, Mass., is to be used for commercial production. The current price is 33 dollars a lb., but it is estimated that the commercial price could be $15/lb.

Sand Cracking Process. A feature of Erdölchemie GmbH's new ethylene plant at Dormagen is non-catalytic fluid cracking using sand as a circulating heat-transfer medium (C.A. 11 April p. 615). The process has resulted from joint efforts of Lurgi Gesellschaft für Wärmetechnik, Frankfurt, and Ruhrgas AG, Essen, in co-operation with Farbenfabriken Bayer, part-owners of Erdölchemie. The new sand cracking technique has a noteworthy versatility with regard to a wide range of feedstocks. Coke deposits are taken care of using an FCC type of regeneration step which supplies the endothermic heat of reaction as well. Lurgi-Ruhrgas say ratio of propylene to ethylene in the product gas can be varied over the range 0.3 - 0.8 without reducing the optimum yield of total olefins.

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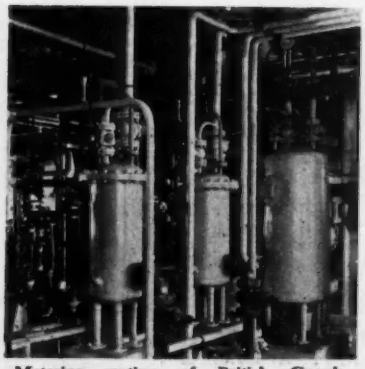
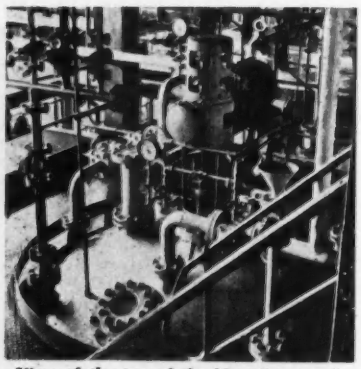
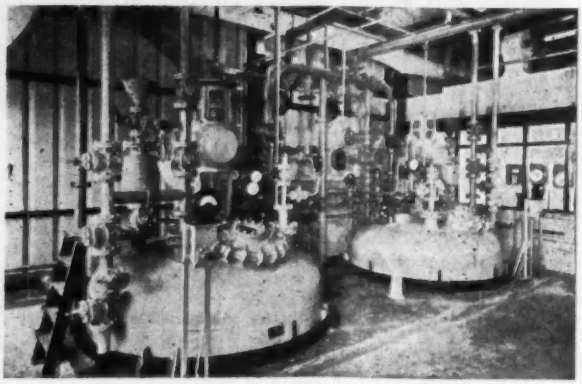


Metering section of British Geon's Hycar plant where the materials used are measured out



View of the top of the blow-down tank at the Hycar plant.

At the S.C.I. annual meeting, Glasgow, centre, Dr. J. T. Farquhar (British Chrome & Chemicals) with, left, Dr. C. H. Giles and, right, Dr. L. G. Gardner (Royal College of Science and Technology)



Two of the polymerisers at the Hycar plant where butadiene and acrylonitrile are copolymerised

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